

Foraging behaviour and nest description of Rufous-breasted Piculet *Picumnus rufiventris*

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SUMMARY. — Aspects of the foraging behaviour of Rufous-breasted Piculet *Picumnus rufiventris* are described for the first time, as well as a nest of the species. The observations were made in Rio Branco, Acre, in westernmost Brazil. The species used culms and branches of bamboo and vines as foraging substrates, and was observed consuming adult ants and their larvae. In early June 2013, an apparently recently fledged juvenile was observed accompanied by two adults near a hole in a dead tree, 1.14 m above ground. The characteristics of the presumed nest are described and compared to those of congenetics.

Rufous-breasted Piculet *Picumnus rufiventris* is a little-known species found in western Amazonia. It occurs from southern Colombia and eastern Ecuador south through eastern Peru and western Brazil to north-west and central Bolivia (Winkler & Christie 2002), and reaches up to 1,250 m in Peru (Schulenberg *et al.* 2007). It is considered a facultative specialist on bamboo (Kratter 1997), although it frequently occurs in other environments, such as understorey of *terra firme* and floodplain forest edges, second growth, river borders and typically in patches of *Gynerium* and bamboos (Winkler & Christie 2002, Schulenberg & Batcheller 2012). It is a relatively large *Picumnus* (Sick 1997, Schulenberg & Batcheller 2012). Despite its broad distribution in western Amazonia, the species appears uncommon, perhaps due to its inconspicuousness, it vocalises comparatively infrequently, and could be commoner than is known (Schulenberg & Batcheller 2012).

Little is known of the species' biology, ecology and behaviour, with no information on its diet (Winkler & Christie 2002, Schulenberg & Batcheller 2012). It is stated to forage alone or in pairs, 1–7 m above ground, sometimes with mixed-species flocks (Winkler & Christie 2002). *P. rufiventris* has strong feet that it uses to hang upside-down, pecking and investigating cracks in barks in live and dead wood, including thicker branches than other *Picumnus* (Winkler & Christie 2002, Schulenberg & Batcheller 2012). The only information concerning the species' breeding biology is that it nests in January–March in Peru and Bolivia, with juveniles collected in June and November. In Ecuador, the season is probably later (Short 1982, Winkler & Christie 2002).

Here I present new information on the foraging behaviour and breeding of *P. rufiventris* in Brazil, including the description of a presumed nest. Observations were made sporadically between March 2013 and September 2015, in the Zoobotanical Park, a 100-ha forest fragment west of the Federal University of Acre (UFAC) campus (09°57'S, 67°57'W; 250 m), municipality of Rio Branco, eastern Acre state. Vegetation in the park is secondary in several stages of regeneration, with *Guadua weberbaueri* (Poaceae) bamboo patches in many areas (Guilherme 2001). Fine-barred Piculet *P. subtilis* also occurs at the site, but only in open parts of the UFAC campus. Two additional Picidae occur in bamboo patches in the area: Little Woodpecker *Veniliornis passerinus* and Rufous-headed Woodpecker *Celeus spectabilis*.

Observations were made using binoculars, and behaviour was described in a field notebook. Playback was not used, with individuals being located by the sound of the bird's bill tapping on the substrate.



Figure 1. Rufous-breasted Piculet *Picumnus rufiventris* foraging on secondary bamboo branches (A), vines (B), a branch of the exotic bamboo of the genus *Phyllostachys* (C) and a hole made by the species in a bamboo culm (Tomaz Nascimento de Melo)



Figure 2. Nest hole of Rufous-breasted Piculet *Picumnus rufiventris*, Zoobotanical Park, Rio Branco, Acre, Brazil, June 2013 (Tomaz Nascimento de Melo)

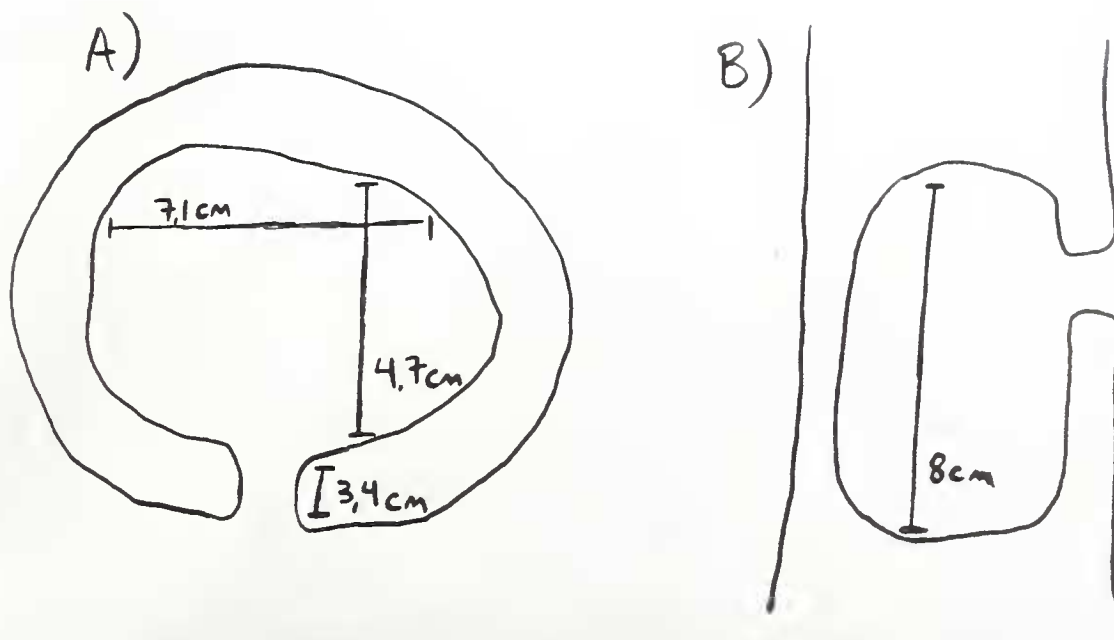


Figure 3. Schematic drawing of Rufous-breasted Piculet *Picumnus rufiventris* nest: (A) top view of internal cavity, and (B) side view of the internal cavity.

Foraging behaviour

Of 23 foraging events recorded, *P. rufiventris* was observed several times in mixed-species flocks led by Bluish-slate Antshrike *Thamnomanes schistogynus* ($n = 3$). During most observations, pairs were seen foraging close together ($n = 18$). Foraging height was 1–6 m. Substrates on which the species foraged involved bamboo culms ($n = 10$), secondary bamboo branches ($n = 8$; Fig. 1A), vines ($n = 4$; Fig. 1B), and, once, a bird was seen foraging on a branch of an exotic bamboo *Phyllostachys* sp. (Poaceae; Fig. 1C). When foraging on bamboo substrates, *P. rufiventris* preferred culms and live branches ($n = 11$), and focused its efforts on internodes, with an average of 2–3 holes per internode. The species assumed many acrobatic postures when foraging; usually it climbs the bamboo, occasionally tapping the substrate and, subsequently, focuses efforts on one spot. Twice, individuals were observed taking adult and larvae ants, extracted from bamboo branches. The mean dimensions of holes made by *P. rufiventris* were 3×8 mm ($n = 8$; Fig. 1D).

Nest

In 3 June 2013, a pair of *P. rufiventris* was observed with a juvenile, perched beside a cavity in a dead tree. The juvenile called frequently, while the adults gave short sharp calls and appeared alarmed, often changing perches, possibly due to my presence. The juvenile had rufous underparts, but was overall paler, lacking the typical white-spotted black crown of adults. After a few minutes, the birds flew away and it was not possible to follow them. Given the behaviour I witnessed, and the proximity of the birds, the cavity was assumed to be the nest site, although they were never observed entering or leaving the hole. It is possible the chick had just fledged, immediately prior to my observation. The nest (Fig. 2) was sited in a dead tree, dbh 41 cm, 1.14 m above ground. The external entrance hole was oval-shaped, 3.5×2.6 cm wide, with a diameter of 3.4 cm. The interior of the cavity was 8 cm

deep and had a diameter of 7.1×4.7 cm (Fig. 3), and within there were ant and beetle elytra remains. Cavity measurements were taken after the birds left the site and the data were collected by cutting the trunk horizontally above the nest hole. The surrounding vegetation was characterised by a dense understorey, with abundant bamboos and vines.

Discussion

Following mixed-species flocks and foraging height correspond to the information presented by Winkler & Christie (2002) and Schulenberg & Batcheller (2012). My observations reinforce the fact that this *Picumnus* has, due to its large feet, the capacity to explore thicker substrates, not being restricted to thin branches like congeners, as mentioned by Schulenberg & Batcheller (2012), although the species does not utilise bamboo culms as heavy as those exploited by *Veniliornis passerinus* and *Celeus spectabilis*, thereby diminishing potential competition between them and *P. rufiventris*.

The species' foraging behaviour is not well documented (Winkler & Christie 2002, Schulenberg & Batcheller 2012). It did not use a broad variety of substrates, possibly because, at my study site, bamboo culms and vines are the most abundant substrates in the understorey. The observation of foraging in an exotic bamboo, which is structurally similar to native bamboos of the genus *Guadua*, indicates that it is presumably vegetation structure that is fundamental to the species' foraging behaviour, like that of other species associated with bamboo forests, as demonstrated by Socolar *et al.* (2013). Consumption of ants and their larvae has also been documented for two other woodpecker species dependent on bamboos: *Celeus spectabilis* (Kratter 1998) and Kaempfer's Woodpecker *C. obrieni* (Leite 2013).

The breeding season coincides with that reported for Peru and Bolivia, with juveniles previously collected in June (Short 1982). According to Winkler & Christie (2002), this is the first description of the species' nest. Few data on breeding are available for species of *Picumnus*, compared to larger woodpeckers. For only six of the 27 species in the genus is detailed information on nests available, with a few data for several more (Winkler & Christie 2002). The nest of *P. rufiventris* shares features with nests of other *Picumnus*. The entrance hole is 2×3.7 cm in White-barred Piculet *P. cirratus* (Kirwan 2009), 3 cm in White-wedged Piculet *P. albosquamatus*, 2.2×2.5 cm in Olivaceous Piculet *P. olivaceus* (Winkler & Christie 2002) and 2.5 cm in Ochraceous Piculet *P. limae* (Silva *et al.* 2012). Although *P. rufiventris* is considered a large species of *Picumnus*, the interior of the nest cavity is shallower than that documented for *P. cirratus* (10–20 cm: Kirwan 2009), but similar to *P. olivaceus* (9 cm: Winkler & Christie 2002). The cavity's internal diameter is similar to that reported for *P. cirratus* (5×6.3 cm: Kirwan 2009) and *P. olivaceus* (5–6 cm: Winkler & Christie 2002). Nests sited less than 2 m above ground are common in the genus, like that described here (Winkler & Christie 2002, Silva *et al.* 2012).

My observations contribute to knowledge of diet and foraging behaviour for *P. rufiventris*, as well as involving the first description of a nest for this poorly known species. In Acre, the species occurs in floodplain forests and open forests with bamboo, and can be common, especially where bamboos abound in the understory. The few data on its biology and ecology partially reflect the species' inconspicuous behaviour and the dense understorey environment it inhabits, hampering data collection.

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